

Features

- Frequency: 30~300MHz
- Gain: 30.5dB
- Noise Figure: 0.6dB
- Supply Voltage: +5V@65mA
- Die Size: 0.72mm×1.24mm×0.1mm

Typical Applications

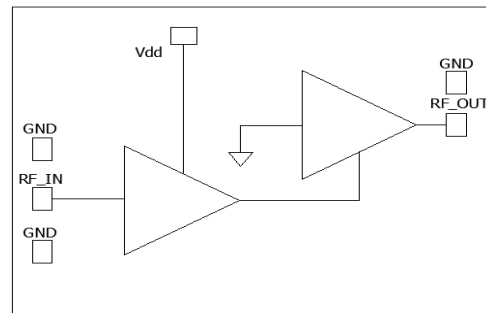
- Radar and ECM
- RF/ Microwave radio
- Military and Space
- Test and Measurement
- Fiber Optics

General Description

XT3002 is a GaAs MMIC Low Noise Amplifier die which operates between 30 to 300MHz. The amplifier can provide 30.5dB gain, 20.5dBm OutputP_{1dB}, 0.6dB noise figure from a 65mA supply current.

The chip offers full passivation for increased reliability and moisture protection. This amplifier is the perfect alternative to higher cost hybrid amplifiers.

Functional Diagram



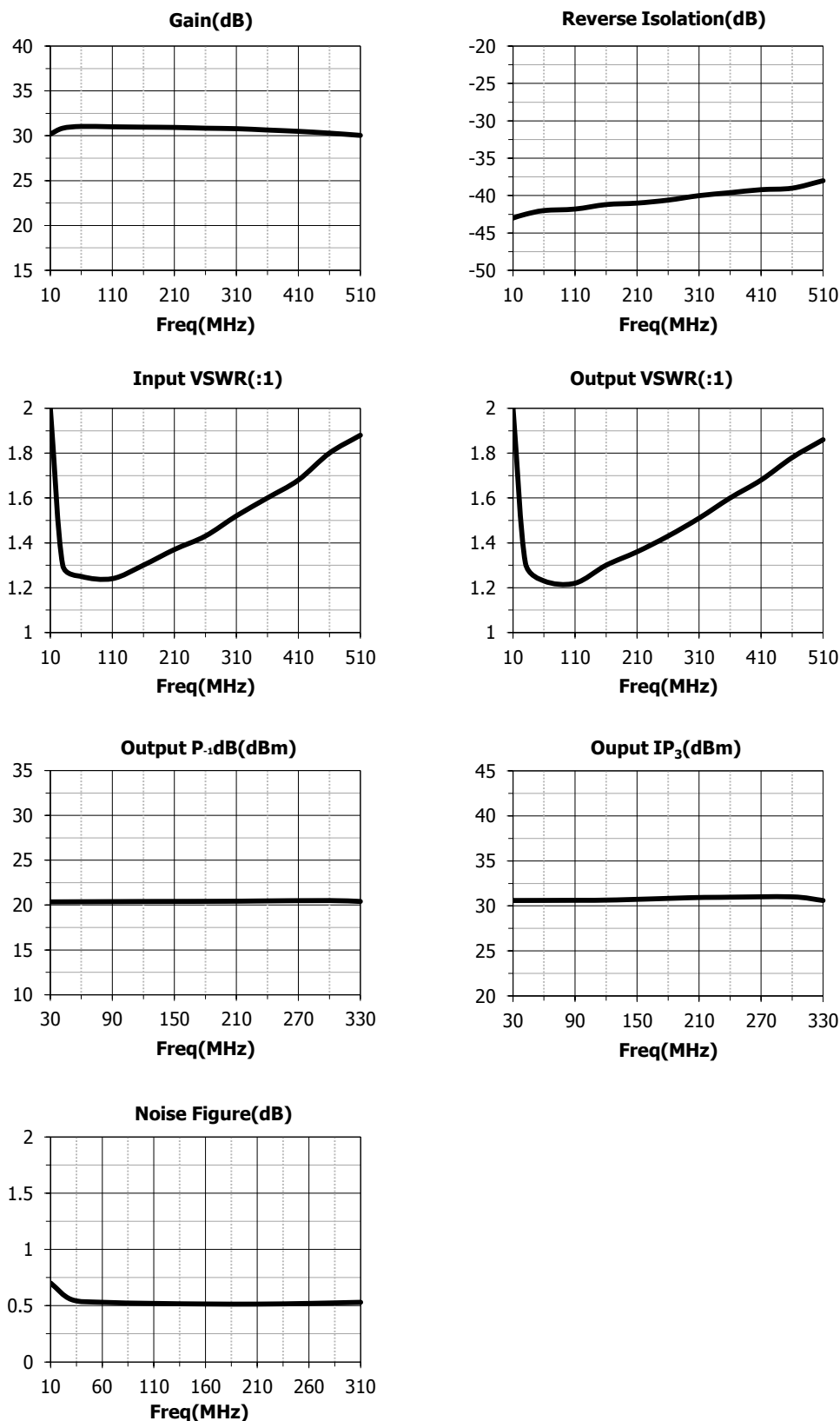
Electrical Performance (T_A=25°C,V_D= +5V,I_D=65mA,Z₀=50Ω)

Parameter	Min	Typ.	Max	Units
Frequency Range	30~300			MHz
Gain	—	30.5	—	dB
Gain Flatness	—	0.1	—	dB
Reserve Isolation	—	-33	—	dB
Input/Output VSWR	—	1.6	—	:1
Noise Figure	—	0.6	—	dB
Output Power for 1 dB Compression (OP _{1dB})	—	20.5	—	dBm
Output Third Order Intercept (OIP ₃)	—	31	—	dBm
Supply Current(I _D)	—	65	—	mA

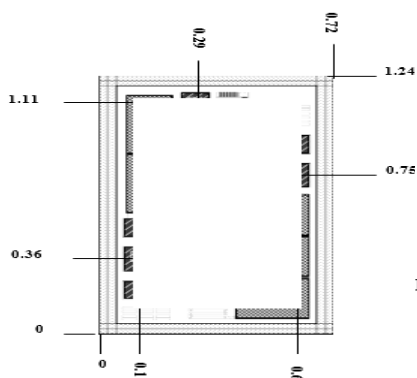
Absolute Maximum Ratings

Maximum Input Power	+18dBm	Operating Temperature	-55°C~+85°C
Channel Temperature	+150°C	Storage Temperature	-65°C~+150°C

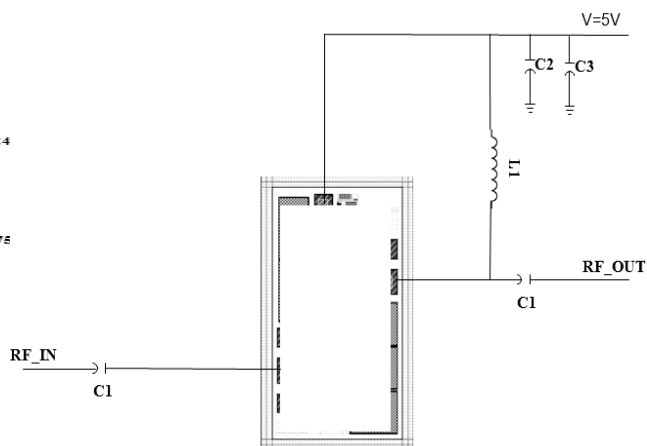
Typical Performance Curve



Die Outline (all dimensions in mm)



Assembly Diagram



Components List

Reference Des.	Value	Part Number	Manuf.	Size
C1	2200pF	GRM188R61H222KA01	MURATA	0603
C2	2200pF	GRM188R61H222KA01	MURATA	0603
C3	10nF	GRM1857U1A103JA44	RADVISTA	0603
L1	820nH	0603LS821XJLC	COILCRAFT	0603

Attention:

GaAs MMIC devices are susceptible to damage from Electrostatic Discharge. Proper precautions should be observed during handling, assembly and test.